Serial No.: 10/051,397
Group Art Unit: 2155

REMARKS

Response to Arguments

The Examiner stated that Applicant's arguments filed June 24, 2005, with respect to the rejection of claims 1-25 under 35 USC 102 have been fully considered and are persuasive, and therefore, the rejection has been withdrawn.

The Examiner stated further, however, that upon further consideration a new grounds of rejection is made.

Applicant appreciates the Examiner's diligence in the previous rejections, but respectfully submits that claims 1-25 are believed to contain allowable subject matter over the new grounds for rejection for the reasons explained below.

Claim Rejections - 35 USC §103

Claims 1-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Connery et al., (U.S. 6,570,884, hereinafter "Connery") and in view of Oberman et al., (U.S. 2002/0118640, hereinafter "Oberman"), and further in view of Dixon (U.S. 6,289,461, hereinafter "Dixon").

Connery teaches an interface card for a network or other communication channel, with limited intelligence, is implemented using a relatively slower embedded processor for intercepting certain packets being received. The interface comprises the first port on which incoming data is received at the data transfer rate of the network, a buffer coupled to the port that stores received packets, and a second port coupled with the buffer through which transfer of packets to the host is executed. Packet filters are coupled to the first port, which identifies packets being stored in the buffer that has one of the plurality of variant formats. A processor is coupled with the buffer and is responsive to the packet filter to process identified packets in the buffer. The pattern match logic includes mask logic circuits, circuits to generate a hash in response to bytes selected by the mask, and a comparator, which compares the output of the hash logic with an expected hash. If a match is detected, then the processor is signaled that the packet being received is, or may be, suitable for processing on the network interface card. The mask logic uses the mask modifier in response to the packet format, so that variations of

a particular format can be handled with a single set of pattern match logic circuits. Basically, received packets are identified as having different variant formats and are passed through, discarded, or modified.

Oberman teaches low latency switching of data packets in a network switch. A network switch may include multiple input ports, multiple output ports, and a shared random access memory coupled to the input ports and output ports by data transport logic. Normally, the data transport logic stores packet data into the memory, and the packet data is read from the memory and output to a destination output port. To reduce latency when the switch is not congested, the switching logic may be configured to perform a cut-through operation by routing packets directly from input ports to output ports without storing any portion of the packet. Alternatively, the switch may begin forwarding the stored packet data to the output port before the entire packet has been received or stored in the memory. Basically, received packets are normally stored but may be sent out without being stored or sent out while being received or being stored.

Dixon teaches that a client system stores and sends messages to a server system in a request formatted according to a protocol that can traverse a firewall. Then the client system waits for a response from the server system according to the protocol that can traverse the firewall. The response will include an indication of which messages the server system received from the client system in the last request. If a certain number of messages accumulate at the client system, or a certain amount of time passes before the response is received, the client system will send a second request. The server system also stores and sends the messages to the client system. The server system waits for a first request and a second request from the client system. If the first request has been received and a particular number of messages have accumulated at the server system, then the server system will send a response corresponding to the first request. If the second request is received, the server system will send the response corresponding to the first request even if no messages have accumulated. The response will include any accumulated messages. The next time the client system sends a request, the request will include an indication of which messages the client system received from the server system in the last response. Basically, a client system stores messages and repeatedly or selectively forwards packets to bypass a firewall by a server system, which responds to control the sending of packets by the client system.

Taken as a whole, it is respectfully submitted that Connery, Oberman, and Dixon teach away from a combination and would be inoperative because the combination would respectively have to store, not store, and repeatedly or selectively send a given received packet. This appears to be mutually exclusive treatments of the same packet. According to the Court of Appeals for the Federal Circuit, where there is a specific hint or suggestion is in a particular reference, but the references as a whole teach away from each other, the combination cannot be obvious:

> "We have noted elsewhere, as a "useful general rule," that references that teach away cannot serve to create a prima facie case of obviousness... If references taken in combination would produce a "seemingly inoperative device", we have held that such references teach away from the combination and thus cannot serve as predicates for a prima facia case of obviousness." *In re* Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)[deletion for clarity]

With regard to claims 1, 7, 8, 13, 14, 19, 20, and 25, Applicants respectfully traverse the rejections since the Applicants' claimed combination, as exemplified in claim 1, includes the limitations not disclosed in Connery, Oberman or Dixon of:

> "a First-In-First-Out (FIFO) buffer adapted to receive the incoming messages and to assemble the incoming messages from a serial to a parallel form; and
> a regular-expression pattern matching circuit connected to the FIFO buffer, the regular-expression pattern matching circuit adapted to, concurrent with the assembly of the incoming messages from a serial to a parallel form, recognize Hypertext Transfer Protocol (HTTP) message headers embedded in the incoming messages, parse recognized HTTP message headers into parsed HTTP message headers, and provide the parsed HTTP message headers to the server."

The Examiner states:

> "As to claim 1, Connery teaches a network interface for processing incoming messages sent by a client device to a server, comprising:
> Connery teaches a FIFO buffer coupled to the port that receives incoming packets (see abstract). Connery does not explicitly teach wherein a First-In-First-Out (FIFO) buffer adapted to assemble the incoming messages from a serial to a parallel form."

Applicant respectfully agrees with the above.

The Examiner continues:

> "Oberman teaches a dynamic system and method for routing data packets through a network switch. Oberman further teaches wherein a FIFO buffer performs serial to parallel conversion on an incoming packet (paragraph 0051)."

Applicant respectfully disagrees with the above. The Oberman input FIFO buffer (402) does not perform serial to parallel conversion because this conversion is performed in the Oberman cell assembly queue (422) as shown in Oberman FIG. 1 and stated in Oberman paragraph [0051]:

> "[0051] If one or more of the packet's corresponding output ports are unable to perform cut-through, or if the packet does not meet the requirements for performing cut-through, then the process of writing the packet from input FIFO 402 to shared memory 440 begins. Cell assembly queue 422 effectively performs a serial-to-parallel conversion by dividing the packet into cells and storing the cells into shared memory 440." [underlining for clarity]

Based on the above, it is respectfully submitted that the following Examiner's conclusion is incorrect:

> "It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the teaching of Oberman into the invention of Connery in order to allow data received from the network in bit or byte-serially to be processed by computers in byte- (or word-) parallel form."

The Examiner continues:

> "Connery teaches a regular-expression pattern matching circuit connected to the FIFO buffer, the regular-expression pattern matching circuit adapted to, concurrent with the assembly of the incoming messages, recognize message headers embedded in the incoming messages, parse recognized message headers into parsed message headers, and provide the parsed message headers to the server (col. 4, lines 10-36, col. 6, lines 43-57)." [underlining for clarity]

Applicant respectfully disagrees with the above. Since the Oberman FIFO buffer does not perform a serial to parallel conversion, the Connery format identification circuitry does not meet the claim limitation.

Further, Connery does not teach what the Examiner suggests with regard to "concurrent assembly". Connery loads its FIFO buffer at the same time that it identifies its packet formats but does not teach or suggest further processing as taught in Connery column 4, line 10, through col. 6, line 57:

> "A detailed description of embodiments of the present invention is provided with respect to FIGS. 1-5... The hardware filter 15 identifies a packet having one of a plurality of variant formats, and signals in the processor 14 via line 18 to enable processing of the identified packets...
>
> FIG. 4 illustrates... The hardware pattern matching engine classifies the packet by determining whether the packet includes an optional field or not (block 301)... If a match is found, then a pattern match bit is set in the packet header of the receive FIFO (block 305). After setting the flag, the process proceeds (block 306). If a match is not detected in block 304, then the process proceeds without setting the packet header bit."

The Examiner continues:

> "Connery does not explicitly teach wherein the message headers are Hypertext transfer protocol HTTP message headers."

Applicant respectfully agrees with the above.

The Examiner continues:

> In an analogous system Dixon, teaches wherein a [sic] HTTP message requests are received from a client at a server interface. Server includes a buffer. The request include [sic] header information which identifies it as HTTP request and are forwarded to the sever [sic] for corresponding response (col. 4, line 66 - col. 5, line 14).

Applicant respectfully disagrees with the above. Dixon column 4, line 66, through column 5, line 14, does not support the Examiner's statement about the claim limitation of the regular-expression pattern matching circuit adapted to recognize HTTP message headers, parsed the headers into parsed headers, and provide the headers to the server. Dixon column 4, line 66, through column 5, line 14, states:

> "FIG. 3 ... Server system 120 includes server process 310, buffer 320, and HTTP server 330 coupled as shown. ...HTTP server 330...is specially designed to include messages in transmissions without the overhead of HTTP servers... Alternately, HTTP server 330 can represent any of a number of HTTP servers... Software can use a CGI to modify HTTP transactions according the teachings of the present invention...
>
> ... Server process 310 can communicate with any number of client systems 145 using TCP/IP communications. Firewall 140, however, prevents server process 310 from communicating with client system 110 using TCP/IP 160... " [deletions for clarity]

Based on the above, it is respectfully submitted that the following Examiner's conclusion is incorrect:

> "It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to incorporate the teaching of Dixon's HTTP message headers into the invention of Connery in order to use it in World Wide Web environment of the Internet and that management of HTTP message header is much easier."

Based on all of the above, it is respectfully submitted that claims 1, 7, 8, 13, 14, 19, 20, and 25 are allowable under 35 U.S.C. 103(a) as being patentable over Connery in view of Oberman, and further in view of Dixon because:

> "[T]he prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." *In re* Vaeck, 947 F2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)

With regard to claim 2, Applicant respectfully traverses the rejection since the Applicant's claimed combination includes the limitation not disclosed in Connery, Oberman or Dixon of:

> "a logic circuit connected to the FIFO buffer, the logic circuit adapted to provide a response message to the client device based on a content of the recognized HTTP message headers."

The Examiner states:

> "As to claim 2, Connery teaches the network interface as claimed in claim 1 further including: a logic circuit connected to the FIFO buffer, the logic circuit adapted to provide a response message to the client device based on a content of the recognized message headers (col. 1, lines 13-21, col. 6, line 58 - col. 7, line 10)."

Applicant respectfully disagrees with the above. Connery column 1, lines 13-21, and column 6, line 58, through column 7, line 10, are unrelated to providing "a response message to the client device" but rather how:

> "the processor decides whether to discard the packet, modify the packet, or do nothing..." [Connery col. 7, lns. 3-4]

With regard to claim 3, Applicants respectfully traverse the rejection since the Applicants' claimed combination includes the limitation not disclosed in Connery, Oberman or Dixon of:

> "the regular-expression pattern matching circuit is further adapted to provide to the server the parsed HTTP message headers in a compact form."

The Examiner states:

> "As to claim 3, Connery teaches the network interface as claimed in claim 1 wherein: the regular-expression pattern matching circuit is further adapted to provide to the server the parsed message headers in a compact form (see Fig. 3, col. 5, lines 38-58)."

Applicant respectfully disagrees with the above. Connery FIG. 3 and column 5, lines 38-58, are unrelated to providing "parsed HTTP message headers in a compact form" but rather:

> "FIG. 3 illustrates... An incoming packet...classified according to the presence or absence of an optional field in the packet. Depending on the presence or absence...a mask, selects particular bytes for supply to a CRC generator 213... The mask passes bytes to the hash logic, for which a corresponding bit is set." [deletions for clarity]

With regard to claim 4, Applicants respectfully traverse the rejection since the Applicants' claimed combination includes the limitation not disclosed in Connery, Oberman or Dixon of:

> "the regular-expression pattern matching circuit is further adapted to provide to the server incoming messages that cannot be recognized by the regular-expression pattern matching circuit."

The Examiner states:

> "As to claim 4, Connery teaches the network interface as claimed in claim 1 wherein: the regular-expression pattern matching circuit is further adapted to provide to the server incoming messages that cannot be recognized by the regular-expression pattern matching circuit (see Fig. 3, col. 5, lines 38-58)."

Applicant respectfully disagrees with the above. Connery FIG. 3 and column 5, lines 38-58, cited by the Examiner are unrelated to claim 4 as indicated by the quotation of Connery column 5, lines 38-58, *supra.*, provided for claim 3.

With regard to claim 5, this dependent claim depends from independent claim 1 and is believed to be allowable since it contains all the limitations set forth in the independent claim from which it depends and claims unobvious combinations.

With regard to claim 6, the Examiner states:

> "As to claim 6, Connery teaches the network interface as claimed in claim 1 wherein: the HTTP message headers include HTTP cookies (col. 1, lines 13-24)."

Applicant respectfully disagrees with the above since Connery does not mention or suggest HTTP message headers or HTTP cookies in Connery column 1, lines 13-24.

With regard to claims 7 and 8, it is respectfully submitted that the unobviousness arguments for claim 1 apply to these claims.

With regard to claim 9, it is respectfully submitted that the unobviousness arguments for claim 2 apply to these claims and also the lack of the claimed logic circuit in Connery (col. 1, lines 13-21 or col. 6, line 58 - col. 7, line 10).

With regard to claim 10, it is respectfully submitted that the unobviousness arguments for claim 3 apply to these claims and also the lack of the claimed regular-expression matching circuit in Connery (FIG. 3 or col. 5, lines 38-58).

With regard to claim 11, it is respectfully submitted that the unobviousness arguments for claim 4 apply to these claims and also the lack of the claimed regular-expression matching circuit in Connery (FIG. 3 or col. 5, lines 38-58).

With regard to claim 12, it is respectfully submitted that the unobviousness arguments for claim 6 apply to these claims and also since Connery does not mention or suggest HTTP message headers or HTTP cookies in Connery (col. 1, lines 13-24).

With regard to claims 13 and 14, it is respectfully submitted that the unobviousness arguments for claim 1 apply to these claims.

With regard to claim 15, it is respectfully submitted that the unobviousness arguments for claim 2 apply to these claims and also since Connery does not mention or suggest the claimed logic circuit in Connery (col. 1, lines 13-21, col. 6, line 58 - col. 7, line 10).

With regard to claim 16, it is respectfully submitted that the unobviousness arguments for claim 3 apply to these claims and also since Connery does not mention or suggest the claimed regular-expression matching circuit in Connery (FIG. 3, col. 5, lines 38-58).

With regard to claim 17, it is respectfully submitted that the unobviousness arguments for claim 3 apply to these claims and also since Connery does not mention or suggest the claimed regular-expression matching circuit in Connery (FIG. 3, col. 5, lines 38-58).

With regard to claim 18, it is respectfully submitted that the unobviousness arguments for claim 3 apply to these claims and also since Connery does not mention or suggest the HTTP message headers or HTTP cookies in Connery (col. 1, lines 13-24).

With regard to claims 19 and 20, it is respectfully submitted that the unobviousness arguments for claim 1 apply to these claims.

With regard to claims 21 and 20, it is respectfully submitted that the unobviousness arguments for claim 1 apply to these claims.

As to claim 21-24, it is respectfully submitted that the unobviousness arguments for claims 2-5 apply to these claims.

With regard to claim 25, it is respectfully submitted that the unobviousness arguments for claim 1 apply to this claim.

Based on all of the above, it is respectfully submitted that claims 1-25 are unobvious under 35 U.S.C. 103(a) as being patentable over Connery in view of Oberman, and further in view of Dixon for the reasons given above and because each reference has not been taken as whole but only portions of each reference have been combined and the CAFC has stated:

> "One cannot...pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re* Fritch, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992)

The other references cited by the Examiner showing the prior art have been considered and are not believed to disclose, teach, or suggest, either singularly or in combination, Applicants' invention as claimed.

Conclusion

In view of the above, it is submitted that the claims are in condition for allowance and reconsideration of the rejections is respectfully requested. Allowance of claims 1-25 at an early date is solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including any extension of time fees, to Deposit Account No. 08-2025 and please credit any excess fees to such deposit account.

Respectfully submitted,

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